IN THE CLAIMS:

Please amend claims 1, 4, 14, 16, 19 and 21 as follows:

1. (Currently Amended) A blood collection apparatus comprising:

a blood collection tube defining an inner surface and a closed end; and

a thixotropic gel being configured to form a transverse barrier between a lighter phase and a heavier phase of a blood sample during centrifugation, the gel being selectively deposited and radially contiguous on the inner surface, and displaced a predetermined and calculated distance relative to the closed end, said distance being predetermined and calculated from a formula including a linear dimension factor ~~distance based on at least one dimension~~ of the blood collection tube and a volume factor of the blood sample being collected.

2. (Cancelled)

3. (Original) A blood collection apparatus as recited in claim 1, wherein the gel is selectively disposed along a central portion of the inner surface.

4. (Currently Amended) A blood collection apparatus comprising:

a blood collection tube defining a central inner surface and a closed end; and

a thixotropic gel being configured to form a transverse barrier between a lighter phase and a heavier phase of a blood sample during centrifugation, the gel being deposited on and radially contiguous on the central inner surface and displaced a predetermined and calculated distance relative to the closed end, said predetermined and calculated distance ~~based on the central inner surface~~ defining a predetermined first limit and a predetermined second limit, along the central inner surface, relative to the closed end, the limits being predetermined and calculated from a formula including a length factor ~~based on at least one dimension~~ of the blood collection tube and a ~~the~~ volume factor of a blood sample being collected.

5. (Previously Presented) A blood collection apparatus as recited in Claim 4, further comprising a dispensing apparatus configured to dispense the gel along the central inner surface.

6. (Original) A blood collection apparatus as recited in Claim 5, wherein the dispensing apparatus includes a positive displacement meter configured for dispensing the gel.

7. (Original) A blood collection apparatus as recited in Claim 5, wherein the dispensing apparatus includes a nozzle configured for dispensing the gel.

8. (Original) A blood collection apparatus as recited in Claim 7, wherein the nozzle defines at least one opening configured to dispense the gel.

9. (Original) A blood collection apparatus as recited in Claim 8, wherein the at least one opening is disposed about at least a portion of a circumference defined by the nozzle.

10. (Original) A blood collection apparatus as recited in Claim 8, wherein the nozzle defines a plurality of openings.

11. (Original) A blood collection apparatus as recited in Claim 4, wherein the blood collection tube includes a non-stick coating selectively disposed on the central inner surface.

12. (Cancelled)

13. (Cancelled)

14. (Currently Amended) A blood collection apparatus as recited in Claim 4, wherein the predetermined first limit is based on the following formula: predetermined first limit = $X \cdot C_{LL}$, where X is the length ~~a linear~~ dimension of the blood collection tube and C_{LL} is a constant based on at least one factor of the blood collection apparatus.

15. (Original) A blood collection apparatus as recited in Claim 14, wherein the constant C_{LL} is equal to a numerical value in a range of numerical values between 0.30 and 0.70.

16. (Currently Amended) A blood collection apparatus as recited in Claim 4, wherein the predetermined second limit is based on the following formula: predetermined second limit = $X \cdot C_{UL}$, where X is the length ~~a linear~~ dimension of the blood collection tube and C_{UL} is a constant based on at least one factor of the blood collection apparatus.

17. (Original) A blood collection apparatus as recited in Claim 16, wherein the constant C_{UL} is equal to a numerical value in a range of numerical values between 0.30 and 0.70.

18. (Original) A blood collection apparatus as recited in Claim 4, wherein the gel is disposed along the portion of the central inner surface to prevent migration of the gel relative thereto during centrifuging of the blood collection tube.

19. (Currently Amended) A blood collection apparatus comprising:

means for collecting a sample of blood defining a central inner surface and a closed end; and

a thixotropic gel being configured to form a transverse barrier between a lighter phase and a heavier phase of a blood sample during centrifugation, the gel being deposited on and radially contiguous on a predetermined portion of the central inner surface and displaced a predetermined and calculated distance relative to the closed end, said distance being predetermined and calculated from a formula including a length factor ~~distance based on the predetermined portion that is predetermined based on at least one dimension~~ of the means for collecting a blood sample and a volume factor of the blood sample being collected.

20. (Original) A blood collection apparatus as recited in Claim 19, further comprising dispensing means configured to dispense the gel along the predetermined portion of the central inner surface.

21. (Currently Amended) A method for separating a sample of blood into portions including a light serum portion and a heavy cellular portion, the method comprising the steps of:

providing a blood collection tube defining a central inner surface and a closed end;

providing a dispensing apparatus configured to dispense a thixotropic gel being configured to form a transverse barrier between the light serum portion and the heavy cellular portion of a blood sample during centrifugation, the gel being deposited and radially contiguous along a portion of the central inner surface and displaced a predetermined and calculated distance relative to the closed end, said distance ~~based on the portion of the central inner surface~~ defining a predetermined first limit and a predetermined second limit, along the central inner surface, relative to the closed end, the limits being predetermined and calculated from a formula including a length factor ~~based on at least one dimension~~ of the blood collection tube and a volume factor of the blood sample being collected;

depositing the gel for centrifugation via the dispensing apparatus along the portion of the central inner surface in a radially contiguous configuration;

providing the sample of blood within the blood collection tube; and

manipulating the blood collection tube to separate the light serum portion of the blood sample from the heavy cellular portion of the blood sample.

22. (Original) A method for separating a sample of blood as recited in Claim 21, wherein the step of manipulating includes centrifuging the blood collection tube.

23. (Original) A method for separating a sample of blood as recited in Claim 22, wherein the step of dispensing includes the gel being dispensed along the portion of the central inner surface to prevent migration of the gel relative thereto.

24. (Original) A method for separating a sample of blood as recited in Claim 21, wherein prior to the step of dispensing, the method further comprises the step of determining the predetermined first limit.

25. (Original) A method for separating a sample of blood as recited in Claim 21, wherein the step of providing the dispensing apparatus includes the predetermined first limit being determined based on the following formula: predetermined first limit = $X \cdot C_{LL}$, where X is a linear dimension of the blood collection tube and C_{LL} is a constant based on at least one factor of the method.

26. (Original) A method for separating a sample of blood as recited in Claim 25, wherein the step of providing the dispensing apparatus includes the constant C_{LL} being equal to a numerical value in a range of numerical values between 0.30 and 0.70.

27. (Original) A method for separating a sample of blood as recited in Claim 21, wherein prior to the step of dispensing, the method further comprises the step of determining the predetermined second limit.

28. (Original) A method for separating a sample of blood as recited in Claim 21, wherein the step of providing the dispensing apparatus includes the predetermined second limit being determined based on the following formula: predetermined second limit = $X \cdot C_{UL}$, where X is a linear dimension of the blood collection tube and C_{UL} is a constant based on at least one factor of the method.

29. (Original) A method for separating a sample of blood as recited in Claim 28, wherein the step of providing the dispensing apparatus includes the constant C_{UL} being equal to a numerical value in a range of numerical values between 0.30 and 0.70.

30. (Previously Presented) A blood collection apparatus for separating a sample of blood into portions including a light serum portion and a heavy cellular portion, the blood collection apparatus comprising:

a blood collection tube having an open end, a closed end and defining a central inner surface therebetween, at least a portion of the central inner surface having a non-stick coating, the blood collection tube being configured for receipt of a volume of a blood sample; and

a dispensing apparatus having a nozzle disposed at a distal end thereof, the nozzle including a plurality of openings disposed about a circumference defined by the nozzle, said plurality of openings configured to dispense a thixotropic gel, being configured to form a transverse barrier between the light serum portion and the heavy cellular portion of the blood sample during centrifugation, along a portion of the central inner surface for centrifugation, the portion of the central inner surface defining a predetermined first limit and a predetermined second limit relative to the open end;

wherein the predetermined first limit is based on the following formula: predetermined first limit = $X \cdot C_{LL}$, where X is a linear dimension of the blood collection tube and C_{LL} is a constant based on at least one factor of the blood collection apparatus, and the predetermined second limit is based on the following formula: predetermined second limit = $X \cdot C_{UL}$, where C_{LL} is a constant based on at least one factor of the blood collection apparatus.